WHAT IS CLAIMED IS:

1. A method of manufacturing an electronic device, in which a halftone phase-shift mask, which has a halftone phase-shift pattern provided on an optically transmissive plate and a resist film provided outside the pattern formation area, is obliquely illuminated, thereby transferring the pattern to a photosensitive film provided on a surface of a workpiece.

2. A method of manufacturing an electronic device according to claim 1, wherein different adjacent areas in the photosensitive film provided on the surface of the workpiece are repeatedly exposed in such a way that the resist film is transferred in a partially overlapping manner.

3. A method of manufacturing an electronic device, wherein: when a plurality of masks are used to form a hole pattern and a wiring pattern with a larger longitudinal dimension than the hole pattern on a surface of a workpiece, a first projection exposure process, using a first halftone phase-shift mask having a halftone phase-shift pattern corresponding to the hole pattern provided on a first optically transmissive plate and a metal shade film provided on the surface of the first optically transmissive plate outside the pattern formation area, is performed to form the hole pattern on a first surface of the workpiece; and a second projection exposure process, using a second halftone phase-shift mask having a halftone phase-shift pattern corresponding to the wiring pattern provided on a second

optically transmissive plate and a band-like resist shade film provided outside the pattern formation area, is performed to form the wiring pattern on a second surface of the workpiece.

4. A method of manufacturing an electronic device, wherein: when a plurality of masks are used to form a hole pattern and a wiring pattern with a larger longitudinal dimension than the hole pattern on the surface of a workpiece, first projection exposure process, using a binary mask having a pattern corresponding to the hole pattern comprising a shade part and an optically transmissive part provided on a first optically transmissive plate, is performed to form the hole pattern on a first surface of the workpiece; and a second projection exposure process, using a halftone phase-shift mask having a halftone phase-shift pattern corresponding to the wiring pattern and a resist shade film provided outside the pattern formation area on a second optically transmissive plate, is performed to form the wiring pattern on a second surface of the workpiece.

5. A method of manufacturing a semiconductor integrated circuit device, wherein: when a plurality of fine hole patterns are formed in a dielectric layer provided on a semiconductor substrate having a plurality of semiconductor regions, a first halftone phase-shift mask having a halftone phase-shift film pattern corresponding to the fine hole pattern provided on a surface of a first optically transmissive plate and a metal shade film provided outside the pattern formation area on the surface

of the first optically transmissive plate is used to expose a first photosensitive film provided on the dielectric film; and when a plurality of wiring patterns at least with larger longitudinal dimensions than the fine hole pattern are formed in a conductive layer provided on the semiconductor substrate, a second halftone phase-shift mask having a halftone phase-shift film pattern corresponding to the wiring patterns provided on a surface of a second optically transmissive plate and a resist shade film provided outside the pattern formation area on the surface of the second optically transmissive plate is used to expose a second photosensitive film provided on the conductive layer.

6. The method of manufacturing a semiconductor integrated circuit device according to claim 5, wherein mask alignment marks for the first halftone phase-shift mask are formed in the metal shade film; mask alignment marks for the second halftone phase-shift mask are formed in the halftone phase-shift film; and these alignment marks are used to align the two masks with the semiconductor substrate.

7. A method of manufacturing a semiconductor integrated circuit device, wherein: when a plurality of fine hole patterns are formed in a dielectric film provided on a semiconductor substrate having a plurality of semiconductor regions, a binary mask having a pattern corresponding to the fine hole pattern comprising a shade part and an optically transmissive part

provided on a first optically transmissive plate is used to expose a first photosensitive film provided on the dielectric film; and when a plurality of wiring patterns at least with larger longitudinal dimensions than the hole patterns are formed in a conductive layer provided on the semiconductor substrate, a halftone phase-shift mask having a halftone phase-shift film pattern corresponding to the wiring pattern provided on a second optically transmissive plate and a resist shade film provided outside the pattern formation area on the second optically transmissive plate is used to expose a second photosensitive film provided on the conductive layer.

8. The method of manufacturing a semiconductor integrated circuit device according to claim 7, wherein mask alignment marks for the halftone phase-shift mask are formed in the halftone film, and the alignment marks are used to align the mask with the semiconductor substrate.

9. A method of manufacturing an electronic device, comprising the steps of: preparing a halftone phase-shift mask having a halftone film pattern for dimming exposure light and shifting the phase of the exposure light on an optically transmissive plate to form a circuit pattern and a resist film provided outside the circuit pattern formation area; irradiating the circuit pattern formation area in the halftone phase-shift pattern with light and inspecting for presence or absence of resist residue in the mask by observing fluorescence; and using

the inspected halftone phase-shift mask to expose a photosensitive film provided on the main surface of a workpiece and transfer the circuit pattern to the photosensitive film.

10. A method of manufacturing an electronic device, wherein a photomask with a circuit pattern formed on an optically transmissive plate and a resist film provided in an area outside the circuit pattern formation area to filter out exposure light is provided; and the circuit pattern is transferred a plurality of times to different transfer locations on a photosensitive film provided on a main surface of a workpiece by exposing the workpiece to obliquely incident light through the photomask in a stepped or scanned manner such that the resist film area partially overlaps on different exposures.

11. A method of manufacturing an electronic device, wherein a halftone phase-shift mask is mounted on a reduction projection aligner, the halftone phase-shift mask being formed on an optically transmissive plate and having a halftone phase-shift film in which a circuit pattern and mask alignment marks are formed and a resist shade film provided outside the area in which the circuit pattern and the mask alignment marks are formed; and after the halftone phase-shift mask and a wafer to be exposed are aligned with reference to the mask alignment marks formed in the halftone film, a photosensitive film provided on a main surface of a workpiece is exposed to light obliquely incident through the halftone phase-shift mask.

12. A method of manufacturing an electronic device, wherein a halftone phase-shift mask having a halftone phase-shift pattern provided on an optically transmissive plate and a resist film provided outside the pattern forming area is mounted on a projection aligner with the resist film kept from touching a transportation means and a supporting means, and the pattern is exposed a plurality of times, with light obliquely incident through the mask, onto different adjacent areas of a photosensitive film provided on a surface of a workpiece in such a way that the resist film is transferred in a partially overlapping manner.

13. A method of manufacturing an electronic circuit device, wherein lithography is carried out by using a photomask with a resist film filtering out exposure light deposited outside a pattern formation area in which a circuit pattern is disposed and a photomask with a metal shade film for filtering out exposure light provided outside the pattern formation area, thereby manufacturing the electronic circuit device.

14. A method of manufacturing an electronic circuit device by lithography using a halftone phase-shift masks each having an exposure light transmitting area and an area in which the exposure light is dimmed and reversed in phase, wherein both a halftone phase-shift mask with a resist film for filtering out exposure light deposited outside a pattern formation area and a photomask with a metal film for filtering out exposure

light outside the circuit pattern formation area are used.

15. A method of manufacturing an electronic circuit device according to claim 14, wherein the halftone phase-shift mask with the resist film deposited outside the circuit pattern formation area in which a circuit pattern is used in a gate formation process for the electronic circuit device or a wiring formation process for the electronic circuit device; and the photomask with the metal film formed outside the circuit pattern formation area is used in a conductive hole formation process.

16. A method of manufacturing an electronic device, comprising:

providing a halftone phase-shift mask having a halftone phase-shift pattern formation area including a circuit pattern with plurality of holes arranged on an optically transmissive plate, and a resist shade film disposed outside the pattern formation area and having portions arranged to embrace at least part of the pattern formation area; and

illuminating the mask, thereby transferring the circuit pattern to a photosensitive film provided on a surface of a workpiece.

17. A method of manufacturing an electronic device according to claim 16, wherein different adjacent areas in the photosensitive film provided on the surface of the workpiece are repeatedly exposed in such a way that a pattern of the resist film is transferred in a partially overlapping manner.

18. A method of manufacturing an electronic circuit device according to claim 16, wherein the resist shade film surrounds the pattern formation area.

19. A method of manufacturing an electronic device, comprising:

providing a photomask having a circuit pattern including a plurality of holes formed in a circuit pattern formation area on an optically transmissive plate, and a resist shade film provided in an area outside the pattern formation area and having portions arranged to embrace at least part of the circuit pattern formation area to filter out exposure light; and

transferring the circuit pattern a plurality of times to different transfer locations on a photosensitive film provided on a main surface of a workpiece, by exposing the workpiece to incident light through the photomask in a stepped or scanned manner, such that transfer areas on the workpiece corresponding to the resist film partially overlap for different exposures.

20. A method of manufacturing an electronic circuit device according to claim 19, wherein the resist shade film surrounds the pattern formation area.

21. A method of manufacturing an electronic device, comprising:

providing a halftone phase-shift mask having a halftone phase-shift pattern including a plurality of holes provided in a pattern formation area on an optically transmissive plate, and a resist shade film provided outside the pattern formation area and having portions arranged to embrace at least part of the pattern formation area;

mounting the halftone phase-shift mask on a projection aligner with the resist shade film being kept from touching a mask transportation and support system; and

exposing the pattern a plurality of times, with light incident through the mask, onto different adjacent areas of a photosensitive film provided on a surface of a workpiece in such a way that transfer areas on the photosensitive film corresponding to the resist film are partially overlapping for different exposures.

22. A method of manufacturing an electronic circuit device according to claim 21, wherein the resist shade film surrounds the pattern formation area.